

**AVAILABILITY OF TEACHER AND FACILITIES
FOR LEARNING MATHEMATICS AT SECONDARY SCHOOL
INDRAGIRI HILIR RIAU**

Yenita Roza¹⁾, Rahmita Lutfi²⁾, Leni Novianty³⁾

(1) Math Edu Dept University of Riau, e-mail: rozayenita@yahoo.co.uk

(2) Economic Dept University of Riau (3) Economic Dept UIN Susqa

Abstract

This study aimed to describe the conditions of teacher and facilities for the implementation of learning mathematics for junior and high school level in Indragiri Hilir. The findings of this study use as a reference for stakeholders in designing the policies for education to meet the commitment to educational services. The primary data in this research is collected by giving questionnaires and interviews in 20 subdistricts in Indragiri Hilir. Additional data provided by focus group discussions with principals, teachers, supervisors, Board of Education, as well as officials in the education office. The data in this study was analyzed quantitatively and qualitatively. In general, this finding based on the condition of the teachers availability, includes the needs and level of education, facilities include media, classrooms, libraries and laboratories in accordance with the national standards of the facilities and infrastructure. Research shows classroom availability for junior level is generally adequate, but not at the high school level. Learning facilities such as libraries, laboratories found inadequate at all levels, only vocational schools having sufficient lab facilities. In junior high school, the number of mathematics teacher meets the requirements, but not at the senior high school level, mathematics teach by non-mathematics background teachers. Not all teachers who teach junior and senior high school level had S1 certified as require by government regulation. The Indragiri Hilir local government must work harder to develop and increase the means for learning mathematics.

Keyword: Mathematics Education, Indragiri Hilir

INTRODUCTION

Learning through classroom activities is a process that focuses on constantly improving of the human being. Where education process occurs, indicating that education has intrinsic values of human dignity. In fact, educational institutions or schools have only a very limited time, and filled with strict rules. The other problem is that schools tend to think of themselves as the only place of learning for the inheritance for future generations. Moreover, because of the complexity and heterogeneity of the type, nature and the school situation, most people identified school as an education. When discussing about education, the discussion tends to talk about the school system. This universal and comprehensive educational paradigm just seen and practiced adaptively. In fact, the development of education more dependent on the governments prevailing political, the development of education should have been free and only for the sake of teaching practice.

Improving the quality of human resources can not be done except only through education. Therefore, it is only by improving the quality of education, the quality of human resources can be improved. Realizing of the importance of improving the quality of education, government develops policies and efforts to improve the quality of human resources. Along

with the reform of the government roles in Indonesia, the reformation of education is also implemented based on the changes on national education policy. For that reason, all of the policies related to the change, improvement and development of programs are done on all areas, levels and types of education. Programs are focused on the pursuit of providing quality education services in accordance with national educational standards. Developing education is a joint effort all the parts of the government and society in a planned and systematic way to help the students actively developing their potential to have the spiritual strength of religious, personality, intelligence, having good character and the skills.

The implementation of regional autonomy, particularly in education is new program which requiring the precision in its implementation, in order not causing a negative effect. The negative impact of development need to be anticipated along with various problems and challenges to be faced. Issues which relating to the quality of education in the region can not be treated in the sameway. The diversity of geographic location with a variety of cultures, customs and language, the implementation of education required patterns are not uniform. The diversity of the natural environmental background and work, also requires the existence and content of the different patterns of educational services.

The main challenges which must be faced in the development of education in the region with regard to aspects: (1) improving the quality of education, (2) the distribution of education, (3) the management efficiency, (4) public participation, and (5) accountability. This study aims to collect and process information concerning the availability of teachers and educational facilities in Indragiri Hilir, especially for mathematics lesson. These data will be useful for giving directions of Educational policy in Indragiri Hilir, to guide the report of Educational profile and as the guidelines in deveoping target achievement in Indragiri Hilir

RESEARCH METHOD

The data analysis in this study used qualitative methods. Qualitative research is based on the triangulation of data generated from three methods of interviews, participant observation and document records (Cresswell, 1994). The data collection in this study were in depth interviews, and review of the organizational record. The data in this research is primary data (distributed in the form of a questionnaire) and secondary data (in the form of organizational record).

RESULT AND DISCUSSION

Officially, Indragiri Hilir Regency becomes Regional Level II based on law no 6 in June 14, 1965. Indragiri Hilir Regency is located on the east coast of the island of Sumatra, Indragiri Hilir is Riau province south gate, with an area of 11605.97 square kilometers and water area 7.207 Km². The population of about 683.354 people consists of various ethnicities. Indragiri Hilir Regency is a regency among 11 regencies/cities are located in the province Riau. Now, Indragilir Hilir is divided into 20 Districts, 192 villages and 18 urban villages with the central government in Tembilahan.

Implementation of basic education services in accordance with educational minimum standard services is the authority of districts/cities. Providing educational services by the districts/cities are provided the primary education services include availability of schools units within a reasonable walking distance no more than 6 km away from permanent resident in remote areas. The number of students in each classroom not exceed 36 people. Each schools has science laboratories equipped with tables and chairs enough for 36 students and a minimum of one set of equipment for the demonstration and practice of experimental science students.

At each schools should available one teacher for each subject, and for remote regional, there is one teacher for each subject cluster. Teacher at Junior high level (SMP/MTs) or other equivalent form, must have the qualification of minimal diploma four (D-IV) or undergraduate

(S1) in accordance with the subjects taught, and obtained from accredited universities. At each SMP / MTs, available 70% teachers with academic qualification of S-1 or D-IV and half of them (35% of total teachers) are certified teachers, for each remote area accordingly 40% and 20%. Each SMP/MTs should provide atleast one qualified and certified teachers for Mathematics, Science, Indonesian, English and Civics Education. In addition, for each district/city, all the headmasters of SMP/MTs has to hold qualified academic S-1 or D-IV and having teacher certification

Analysis of the teacher conditions is based on the availability and the need of teachers which is calculated in accordance with the government requirements. For junior high level, the availability of teacher is calculated based on the following conditions: 1) Each class on certain subjects is taught by one teacher in other word each teacher only teach one subject in certain class; 2) Teachers only teaching the subjects which in accordance with her teaching certificate; 3) Each teacher has to teach 24 hours per week ; 4) The number of class used is calculated as is the teacher-student ratio in accordance with the Government Regulation No. 74 of 2008 and the National Minister of Education Regulation No. 41 of 2007 about the standards process for primary and secondary education units.

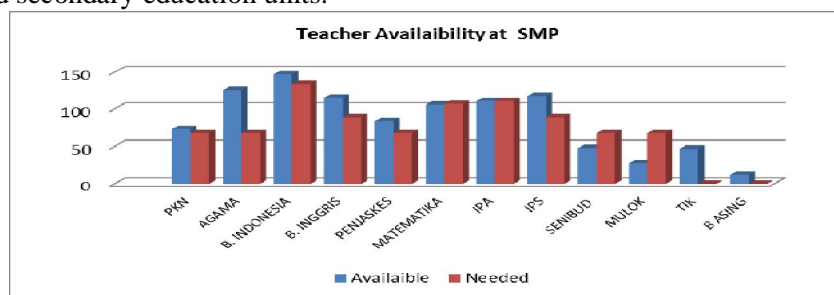


Chart 1: Teacher availability by subject at SMP

The above chart shows the availability of teachers at SMP according to the subjects they teach. The availability of teachers is calculated in accordance with the teacher's loads at Curriculum 2013. The above chart shows that in general at secondary level, the number of teacher is more than needed on almost all subjects. Those teachers are from subject religion, English and social studies. Subjects who have just enough teachers are the subjects of mathematics and science. A lack of teacher occurs only on subject Culture Arts and local content. On secondary level accordance to Curriculum 2013, the ICT subjects were not given, so there are many ICT and foreign language teacher are actually not needed in secondary school. The teachers in this two subjects may be used for teaching the subject culture art and local content that lack of teacher.

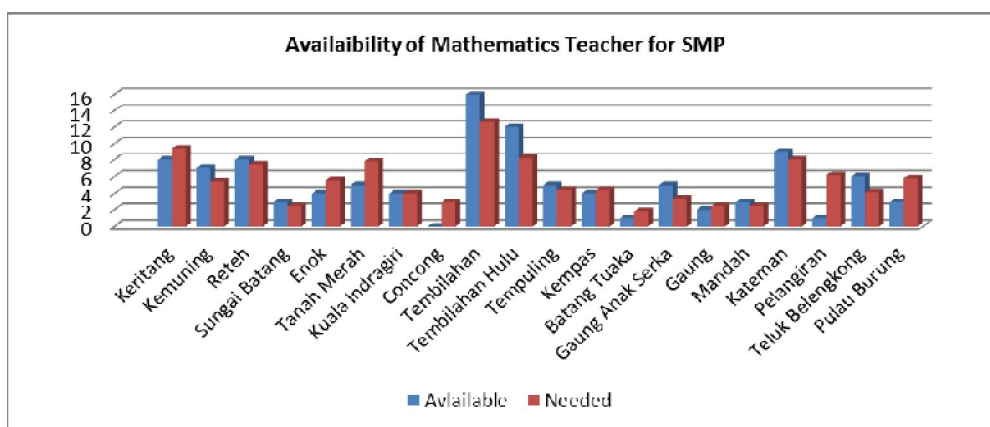


Chart 2: The Availability of Mathematics Teacher at SMP by District

The above Chart 2 specifically shows the availability of mathematics teachers in all districts in Indragiri Hilir. The conditions of teachers availability in each district varies widely, there are some sub-districts that having surplus teacher of mathematic such as sub-district Kemuning, Tembilahan, Tembilahan Hulu, Gaung Anak Serka, and Teluk Belengkong. The areas which having enough mathematics teacher are sub-district Sei Batang, Enok, Kuala Indragiri, Mandah, Kateman and Pulau Burung. The other sub-districts such as Keritang, Reteh, Tanah Merah, Concong, Tempuling, Kempas, Batang Tuaka, Gaung and Pelangiran is the sub-district which having lack of mathematics teacher. Based on the above data can be seen the tendency of surplus teachers in urban areas or areas within a short distance of the city and conversely, the lack of teacher in a fairly remote area or difficult to reach from the city.

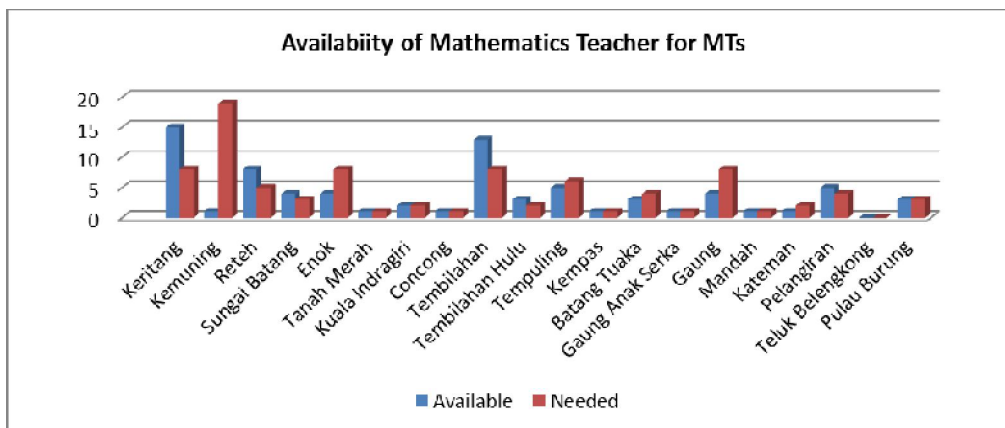


Chart 3: The Availability of Mathematics teacher at MTs by District

Chart 3 shows the data availability of mathematics teacher at MTs for each district. Not different from the condition of mathematics teacher at SMP, there are surplus and lack of teachers. Tendency for lack of teacher area is on the remote sub-district and difficult to reach from town.

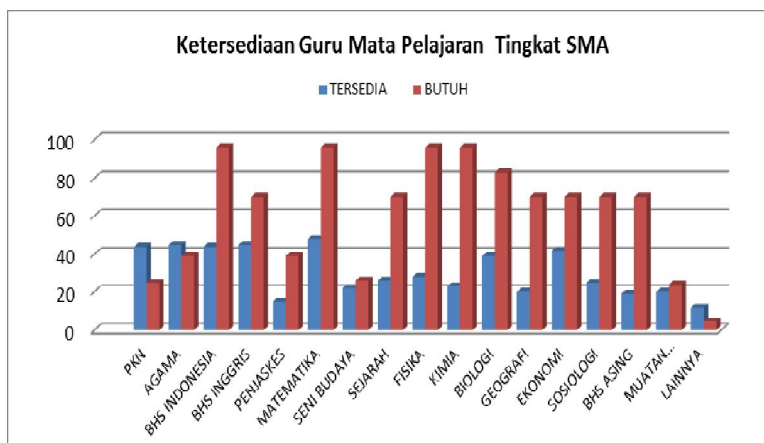


Chart 4: The Teacher Availability at SMA by Subject

The above chart shows the availability of teachers at level Senior Highschool (SMA) based subjects calculated in accordance with the requirements of Curriculum 2013. The graph shows that generally there is lack of teachers in all subjects, except for subject Civic (PKN) and religion. In other topics, the lack of teachers is significant especially in science. In mathematics, only half of the needed teacher fulfilled at level SMA.

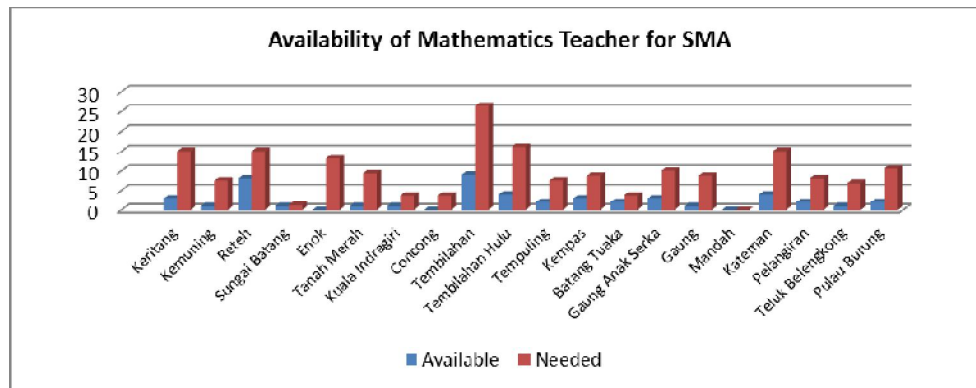


Chart 5: The Availability of Mathematics Teacher at SMA by District

The above chart shows the availability of mathematics teacher at SMA in every sub-district in Indragiri Hilir. Not all districts have the comprehensive information, so that there are some sub-district cannot be calculated the availability of its mathematics teacher. Almost all districts which having data having lack of math teacher at senior highschools level.

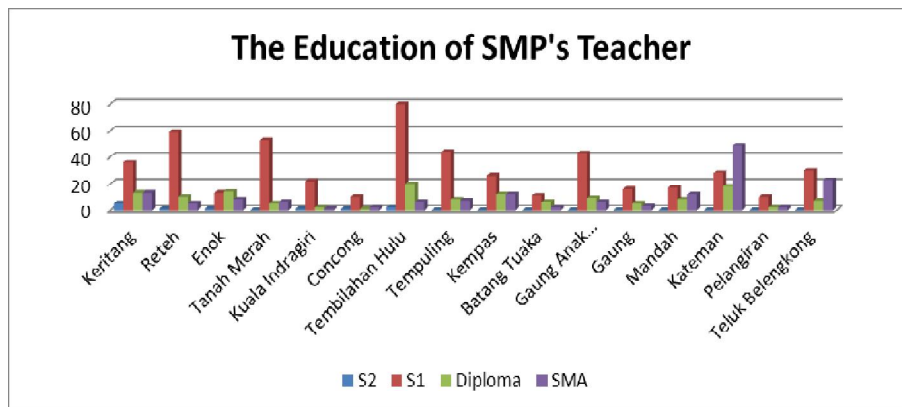


Chart 6: The Education of SMP's Teacher

The above chart show the education of teacher who teach at junior high schools (SMP). At most of the sub-district the number of teacher holding undergraduate certificate is higher than the others. At the same time we also found that each sub-district still allowed a high school graduate teach at junior level.

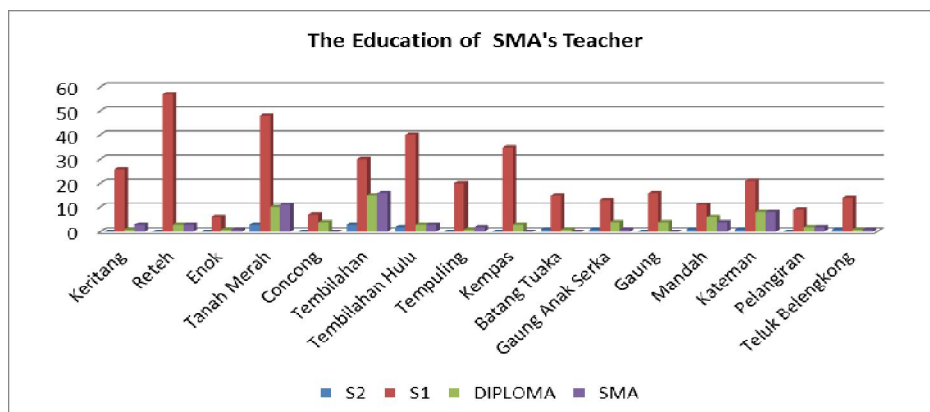


Chart 7: The Education of SMA's Teacher

From the above chart can be viewed the education of teacher from high school to the graduate level. At all levels of schools shows the same trend. The highest number is the teachers already have an undergraduate degree S1, followed by a diploma and high school. The number of teachers who hold graduate certificate is still very low. At SMA, teachers with undergraduate degree more than others. However, we still have a teacher at SMA which only having high school degree. Based on observations, it happens at private schools.

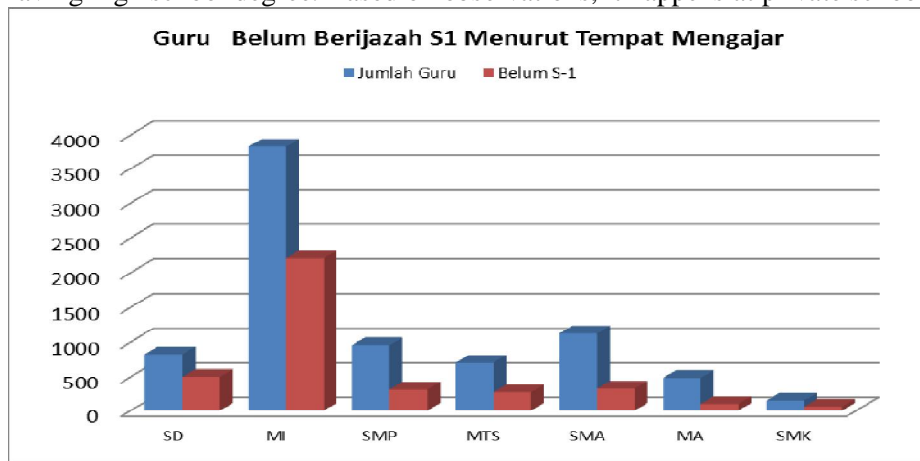


Chart 8: Teacher without Undergraduate Certification by School Level

The above graph shows the number of teachers who are not holding undergraduate certification as required by government regulation. Those teachers gradually have to continue their education to meet the teaching requirement. At primary schools more than 50% of the teachers are not having undergraduate certificate. In SMP, MTs and SMA, there are about 30% of teachers who do not have undergraduate certificate, while for MA only about 25% of teachers who do not have undergraduate certificate. Based on the above data, the local government through the department of Education Indragiri Hilir have to create an immediate program for teachers who are not having undergraduate certificate to advance their study. This program can be done with the sabbatical leave program or on job training permission for teachers who want to continue education with independent budget. This program must be well planned, so that the number of teachers who are not holding undergraduate certificate can be reduced gradually without disturbing the learning process on their school.

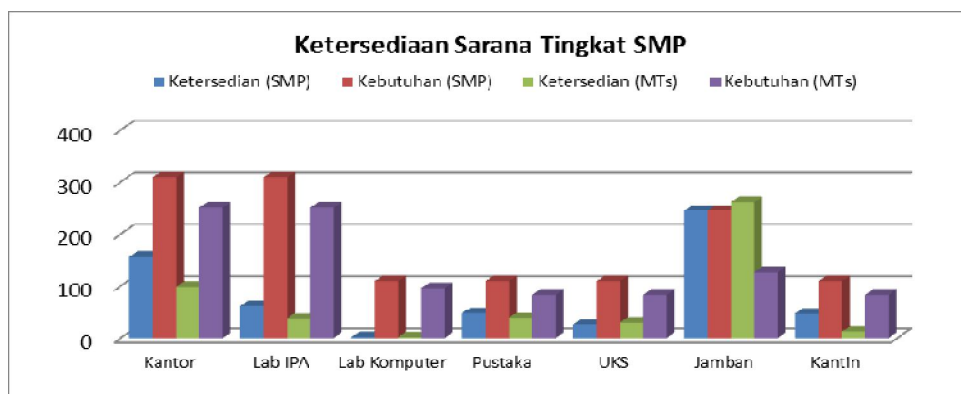


Chart 9: The Availability of School facilities at SMP/MTs

Availability of facilities and infrastructure in all educational institutions nationally controlled by National Standard for Education. Above chart shows that availability all types of facilities are still inadequate at both the SMP and MTs, except for sanitation. Obviously, this

means a shortfall will disrupt the school effort in the implementation of the learning process in general. At the junior level, the students should have taken their science and Computer practicum, while the availability of Science Lab and Computer was unadequate. From the observation, it was also found the schools which having lack of equipment and quality on their Science Lab.

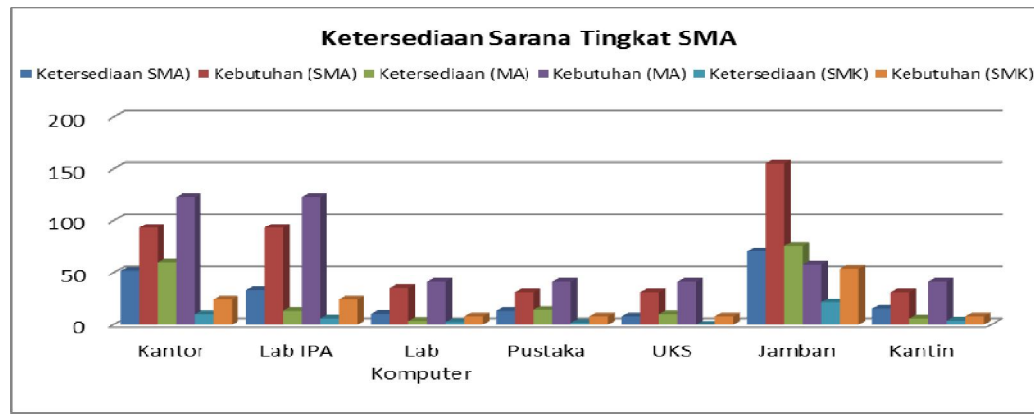


Chart 10: The Availability of School facilities at SMA

The same case with primary and secondary, on senior high level also found that lack of facilities happen for all types, including sanitation. The lack of Science Laboaratory is very high, for all type of senior high school.

CONCLUTION AND SUGGESTION

1. Availability of School

On primary level in all sub-districts, except sub-district Tembilahan Hulu, the number of available schools already fulfil the amount needed. Given the above condition, for this time, sub-district Indragiri Hilir does not need to build the new schools for primary level. For Secondary level the sub-districts which already exceeds the availability of the number of school are Reteh, Sungai Batang, Enok, and Pulau Burung. The other sub-districts do not fulfill the number of school. To overcome this case, the Indragiri Hilir local governments need to plan the additional schools. The addition can be done by opening new schools or adding classroom to the existing school. Anyway, the addition of class can only be done at school which having class less then 24 with consideration the distance of the school from the houses no more than 6 kilometers. At senior High level, there are some sub-districts that the number of schools available already exceed the minimum standards such as sub-district Reteh, Sungai Batang, Enok, Batang Tuaka, Gaung Anak Serka and Teluk Belengkong. Generally, this surplus school occurred because high number of private schools. The other sub-districts still need additional high school. The addition can be done by building a new school unit or adding classroom into the available school with a record that the number of class no more than 27 at one school.

2. Avalaibility of Classroom

In all districts, the available classroom less than the number of classroom needed. However, the number of existing class generally also higher than the number it shold be. This condition can be concluded that the number of students at a class still less than 28 persons, except in the Kemuning sub-district. The excess of class happened in the sub-district Reteh, Enok, Kuala Indragiri, Batang Tuaka, Gaung and Pelangiran. If it is seen from a comparison of the available class with the class which must exist, the number of available class basically

satisfied. On this condition, the state of local government Indragiri Hilir does not need to program the addition of new class.

At SMP level, generally the number of available classes are sufficient, even exceed the amount class that required, except in the sub-district Kuala Indragiri, Tembilahan Hulu, Pelangiran and Teluk Belengkong. In all sub-district except the sub-district Gaung, the number of existing class greater than the number of ideal class, which means that the number of students in each class is less than the maximum number of 32 students. Based on the above conditions can be relatively sufficient availability, local governments only need to make plans for the addition of new classrooms for the sub-district Pelangiran.

At SMA level, there are some sub-districts that lack of classrooms as the sub-district Keritang, Enok, Pelangiran and Pulau Burung. In some sub-districts, the number of class still more than the number of class which should be such as the sub-district Keritang, Enok, Gaung Anak Serka, Pelangiran, Teluk Belengkong and Pulau Burung. Compared to the number of ideal class, sub-districts which having lack of classroom are the Sub-District Keritang and Kempas. So that, the addition of class is needed to those two districts.

3. Availability of School Facilities

At SMP level, all kinds of facilities are not available sufficiently. This represents a significant deficiency, except for sanitary. The availability of Science and Computer Laboratory was minimal. From the observation, it was also found the school which having Science Lab and Computer, but the type of available equipment is very low, both in type and quality. The same case also found at SMA level, also having lack of facilities for all kinds, including sanitation.

4. Availability of Teacher

Generally, at SMP level, there is surplus of teacher while at SMA level lack of teachers. In mathematics, the lack of teacher only for SMA level, while for SMP level is sufficient. In the Civics subject, there are surplus teacher at SMP and SMA. In subject of Indonesian, English and Sport there are surplus teacher at SMP level and lack of teacher at SMA level. Based on these condition, there is possibility to move a teacher from SMP level to SMA. The lack of teacher on Culture Art subject and local content is happened at both SMP and SMA level. The subjects such as chemistry, physics and biology which are taught in SMA having lack of teachers, while in SMP level, science teacher is sufficient. Social subject at SMA level such as history, economics, sociology and geography having lack of teacher. However, in SMP level, the social teacher is surplus, so that it is possible to cover the deficit in SMA level.

5. Teacher Education

At all levels of education, there are teachers who are not having undergraduate certificate, primary level more than 50% of teachers having this problem. At SMP, MTs and SMA, junior and senior high, there are about 30% of teachers who do not have an undergraduate certificate, while for MA only about 25% of teachers having this problem.

Based on the above conclusion, some important efforts which are recommended to be implemented in the development of education in Indragiri Hilir:

1. Review and Revise the Public Policy for Developing Education

Indragiri Hilir Region has designed the Plan of Development Education for primary and

secondary for 2011-2014. Many of the goals have been designed that can not be reached and difficult to achieve with existing conditions. This plan should be reviewed and revised to be implemented. Referring to the National Standards of Education Indragiri Hilir should establish quality standards for all levels and types of education, so that all those stakeholder in education having a reference to the implementation of educational development.

2. Completing the availability of school as required by National standards

To enhance the quality of learning in schools, it is needed to complete the availability of schools and class, so that the teacher-student ratio, group learning, educational institutions can be fulfilled according to the National Education Standards.

3. Completing Infrastructure to Support Learning Process

All learning facilities and infrastructure, as specified in the national standard of education is need to be completed. The availability of Laboratory also be equipped with the availability of electricity because for the most part of the lab equipment is required of electricity.

4. Colaboration and Coordination Government unit in Implementation of Educational Program

Problems encounter in education are complex issues that can not be solved only by the Department of Education independently. The success of the entire program will be determined by the ability of all stakeholders in education to build the colaboration and coordianation among government unit to implement the policies. The education program is a joint activity which is supported by all relevant agencies such as the department of Social and Health Department.

5. Strengthening of Education Information System Management

Database of education within the management of the available education information system is still having shortage. In the process of collecting data either from the observation or secondary data from various sources, such as the Department of Education and school is encountered that the consistency of data is very low. Therefore, one of the programs that need to be done is to strengthen the database in order to education management information system has accurate data and easy to be accessed by the public.

6. Character Education Based on Local Wisdom

Curriculum 2013 is an improvement of the previous curriculum to improve the quality of education. However, there are a few things which have changed, unlike the previous curriculum that emphasizes for cognitive skills, the curriculum 2013 put the emphasis on a change of attitude or character development, cognitive ability is a tool that can be used to form the attitude. In this case, the curriculum provide a large enough space to take advantage of local knowledge in forming the character according to requirement and local condition. Therefore, the government need to arrange the indicator of character and local knowledge that will be a priority for Indragiri Hilir Regency, so that schools can design a joint development programs. One of the urgent character should be promoted in schools in Indragiri Hilir is clean culture.

BIBLIOGRAPHY

- Anonim, 2008, Manajemen Berbasis Sekolah, Jakarta: Depdiknas.
- Ace Suryadi, 2002, Pendidikan, Investasi SDM, dan Pembangunan: Isu, Teori dan Aplikasi, Jakarta: Balai Pustaka.
- BPKB Jayagiri, 2002, Kumpulan Makalah Vocational Educational, Bandung: BPKB Jayagiri.
- Cresswell, J.W., 1994, Research Design: Qualitative and Quantitative Approach, London: SAGE Publication, International Educational and Professional.
- Davey, K.J., 1988, Pembiayaan Pemerintahan Daerah: Praktek dan Relevansi bagi Dunia Ketiga, Jakarta: Universitas Indonesia. Departemen Pendidikan Nasional, 2006, Rencana Strategis Pendidikan Nasional: Konferensi Nasional Revitalisasi Pendidikan, Jakarta: Sesjen Depdiknas.
- Fasli Jalal, 2003, "Problematis Pendidikan Luar Sekolah/ Dikmas di Indonesia", Makalah, Pertemuan V Sentra Pemberdayaan dan Pembelajaran Masyarakat (SPPM), Lembang Jawa Barat, 27-31 Januari 2003.
- Ibtisam Abu Duhou, 2003, School Based Management (Manajemen Berbasis Sekolah), Terjemahan: Noryamin Aini, Suparto & Abas AlJauhari, Jakarta: Logos Wacana Ilmu dan Pemikiran.
- Peraturan Menteri Pendidikan Nasional Nomor: 22 Tahun 2006 tentang Standar Isi Kurikulum untuk Satuan Pendidikan Dasar dan Menengah.
- Peraturan Menteri Pendidikan Nasional Nomor: 23 Tahun 2006 tentang Standar Kompetensi Lulusan untuk Satuan Pendidikan Dasar dan Menengah.
- Petunjuk Pelaksanaan Sistem Pendidikan Nasional 2003, Jakarta: CV. Ekajaya.
- Sepandji, Kosasih Taruna, 2000, Manajemen Pemerintahan Daerah: Era Reformasi Menuju Pembangunan Otonomi Daerah, Bandung: Penerbit Universal.
- Tim BBE Depdiknas, 2001, Konsep Pendidikan Kecakapan Hidup (Life Skills Education), Buku I, Jakarta: Direktorat Jenderal Pendidikan Dasar dan Menengah.
- Undang Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional.
- Yoyon Bahtiar Irianto dan Uyu Wahyudin, 2003, Pendekatan dan Metodologi Pembelajaran dan Pemberdayaan Masyarakat.